Electric Circuits

AP Physics 2 · Vocabulary in context

Word	Example
Electric current /ɪˈlektrɪk ˈkʌrənt/	**Electric current** is the flow of charge.
amperes /ˈæmpeəz/	The heater draws ten **amperes**.
electromotive force /ɪˌlektrəʊˈməʊtɪv fɔːs/	The battery has an **electromotive force** of 9 V. 9 V
circuit /ˈsɜːkɪt/	A closed **circuit** lets steady current flow through the lamp.
conductor /kənˈdʌktə/	Copper is a good **conductor** of electricity.
series /ˈsɪəriːz/	Springs in **series** stretch more than one spring.
parallel /ˈpærəlel/	Two springs side by side, in **parallel**, are stiffer.
branch /brɑːntʃ/	In a parallel circuit, each **branch** has the same voltage across it.
circuit diagram /ˈsɜːkɪt ˈdaɪəgræm/	Draw a **circuit diagram** before you start any calculation.
short circuit /ʃɔːt ˈsɜːkɪt/	A wire across the battery makes a **short circuit**.
Resistance /rɪˈzɪstəns/	**Resistance** is voltage divided by current.
ohmic /ˈəʊmɪk/	An **ohmic** resistor gives a straight-line I-V graph through the origin. I-V
Ohm's law /əʊmz lɔː/	**Ohm's law** says current is proportional to voltage.

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resistivity /ˌriːzɪˈstɪvəti/	Copper has a low **resistivity**, so it makes good wires.
cross-sectional area /krɒs ˈsekʃənl ˈeərɪə/	A thick wire has a large **cross-sectional area**.
resistor /rɪˈzɪstə/	The **resistor** limits the current.
Electric power /ɪˈlektrɪk ˈpaʊə/	**Electric power** is the energy a device uses each second.
dissipate	A resistor carrying a large current can **dissipate** a lot of heat.
light bulb /laɪt bʌlb/	A **light bulb** turns electrical energy into light and heat.
brightness /ˈbraɪtnəs/	The **brightness** of a bulb rises with the power it uses.
equivalent resistance /ɪˈkwɪvələnt rɪˈzɪstəns/	Two 10 Ω resistors in series have an **equivalent resistance** of 20 Ω. 10 Ω 20 Ω
internal resistance /ɪnˈtɜːnl rɪˈzɪstəns/	The battery's **internal resistance** makes it warm.
junction /ˈdʒʌŋkʃn/	At a **junction**, the current splits.
ammeter /ˈæmiːtə/	Connect the **ammeter** in series.
voltmeter /ˈvəʊltmiːtə/	Connect the **voltmeter** across the lamp.
potential difference /pəˈtenʃl ˈdɪfrəns/	The **potential difference** across the lamp is 6 V. 6 V
nonideal /ˌnɒnaɪˈdɪəl/	A **nonideal** battery has some internal resistance.

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Kirchhoff's loop rule /ˈkɜːkhɒfs luːp ruːl/	**Kirchhoff's loop rule** says the voltages around a closed loop add up to zero.
Kirchhoff's junction rule /ˈkɜːkhɒfs ˈdʒʌŋkʃn ruːl/	**Kirchhoff's junction rule** says the current into a junction equals the current out.
capacitor /kəˈpæsɪtə/	A **capacitor** stores a small electric charge.
time constant /taɪm ˈkɒnstənt/	The **time constant** is RC. RC
RC circuit /ˌɑː ˈsiː ˈsɜːkɪt/	In an **RC circuit**, the capacitor charges slowly through the resistor.

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